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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,397	07/29/2003	E. Premkumar Reddy	06056-0272RE1	8371

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EXAMINER	
POWERS, FIONA	

ART UNIT	PAPER NUMBER
1626	

DATE MAILED: 04/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/630,397	REDDY ET AL.	
	Examiner	Art Unit	
	Fiona T. Powers	1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 January 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25 and 27-54* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-19,24,25,27-33 and 48-54* is/are allowed.

6)☒ Claim(s) *20-23 and 34-47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Receipt is acknowledged of the amendment and Rule 132 declaration filed January 23, 2006, which have been entered in the file.

The amendment is objected to as being in improper format. All amendments must be made under 37 C.F.R. 1.173 and must be relative to the original patent claims (not the last amendment). In claim 14, the number (III) was next to the formula in original patent claim 14. It should be placed within brackets if it is to be deleted. In claims 17 and 18, the radical for R_5 that is being deleted is not what is in the original claims. In the original patent claims it is $-NC(O)R_6^-M^+$. In original claim 27 there is no "wherein" on the same line immediately before "R_3".

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 20 to 23 and 34 to 47 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for treating inflammation, colon cancer, prostrate cancer, breast cancer, brain cancer, lung cancer, pancreatic cancer and bladder cancer does not reasonably provide

enablement for treating a cyclooxygenase-2-mediated disorder, inflammation-mediated disorder that is mediated by a cyclooxygenase-2, neoplasia that is mediated by a cyclooxygenase-2 and angiogenesis-mediated disorder that is mediated by a cyclooxygenase-2. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

The factors to be considered in determining whether a disclosure meets the enablement requirement of 35 U.S.C. 112, first paragraph are as follows:

1. the nature of the invention,
2. the state of the prior art,
3. the predictability or lack thereof in the art,
4. the amount of direction or guidance present,
5. the presence or absence of working examples,
6. the breadth of the claims,
7. the quantity of experimentation needed, and
8. the level of skill in the art.

See In re Wands, 8 USPQ2d 1400.

The nature of the invention is treating a cyclooxygenase-2-mediated disorder, inflammation-mediated disorder that is mediated by a cyclooxygenase-2, neoplasia that is mediated by a

cyclooxygenase-2 and angiogenesis-mediated disorder that is mediated by a cyclooxygenase-2.

The state of the prior art is that the pharmacological art involves screening in vitro and in vivo to determine which compounds exhibit the desired pharmacological activities (i.e. what compounds can treat which specific diseases and by what mechanism). There is no absolute predictability even in view of the seemingly high level of skill in the art. The existence of these obstacles establishes that the contemporary knowledge in the art would prevent one of ordinary skill in the art from accepting any therapeutic regimen on its face.

It is noted that the pharmaceutical art is unpredictable, requiring each embodiment to be individually assessed for physiological activity. In re Fisher, 166 USPQ 18 indicates that the more unpredictable an area is, the more specific enablement is necessary in order to satisfy the statute.

Applicants are claiming the treatment of cyclooxygenase-mediated disorder, inflammation-mediated disorder, neoplasia, angiogenesis-mediated disorder and neoplasia that expresses a cyclooxygenase. The state of the prior art is that cancer therapy remains highly unpredictable. The various types of cancers have different causative agents, involve different cellular mechanisms, and consequently, differ in treatment

protocol. It is known that the challenge of cancer treatment has been to target specific therapies to pathogenetically distinct tumor types, that cancer classification has been based on primarily on morphological appearance of the tumor and that tumors with similar histopathological appearance can follow significantly different clinical courses and show different responses to therapy (Golub et al. page 531). Furthermore, it is known that chemotherapy is most effective against tumors with rapidly dividing cells and that cells of solid tumors divide relatively slowly and chemotherapy is often less effective against them.

The only direction or guidance present in the instant specification is a cyclooxygenase enzyme assay and a soft agar assay to determine the percent inhibition of human colorectal carcinoma cells. The Rule 132 Declaration filed January 23, 2006 and the journal articles attached thereto as exhibits supports the use of the claimed compounds for the treatment of breast cancer, prostrate cancer, brain cancer, pancreatic cancer, lung cancer, colon cancer and bladder cancer.

The breadth of the claims is treating cyclooxygenase-2-mediated disorder, inflammation-mediated disorder that is mediated by cyclooxygenase-2, neoplasia that is mediated by

cyclooxygenase-2 and angiogenesis-mediated disorder that is mediated by cyclooxygenase-2.

The quantity of experimentation needed is undue experimentation. One of skill in the art would need to determine what diseases would be benefited (treated) by inhibition of cyclooxygenase-2 and would then have to determine which of the claimed compounds would provide treatment of which disease, if any.

The level of skill in the art is high. However, due to the unpredictability in the pharmaceutical art, it is noted that each embodiment of the invention is required to be individually assessed for physiological activity by in vitro and in vivo screening to determine which compounds exhibit the desired pharmacological activity and which diseases would benefit from this activity.

Thus, the specification fails to provide sufficient support of the broad use of the compound of the instant claims for the treatment of any cyclooxygenase-2-mediated disorder, inflammation-mediated disorder that is mediated by a cyclooxygenase-2, neoplasia that is mediated by a cyclooxygenase-2 and angiogenesis-mediated disorder that is mediated by a cyclooxygenase-2. As a result necessitating one of skill to perform an exhaustive search for which diseases can

be treated by what compounds of the instant claims in order to practice the claimed invention.

Genetech Inc. v. Novo Nordisk A/S 42 USPQ2d 1001 states that "a patent is not a hunting license. It is not a reward for search, but compensation for its successful conclusion" and "patent protection is granted in return for an enabling disclosure of an invention, not for vague intimations of general ideas that may or may not be workable".

Therefore, in view of the Wands factors and In re Fisher discussed above, to practice the claimed invention herein, one of skill in the art would have to engage in undue experimentation to test which diseases can be treated by the compound encompassed in the instant claims, with no assurance of success.

Applicant's arguments filed January 23, 2006 have been fully considered but they are not persuasive. Applicants argue that the claimed methods are drawn to numerous conditions and disorders which all comprise the common mechanism of COX-2 activity, any cells involved in any such conditions or disorders are equally amenable to treatment according to the present invention. Applicant cites references to correlate the inhibition of COX-2 activity and the in vitro treatment of cancer cells whth the presently-claimed treatment of cancer.

Applicants also provide Reddy Declaration under Rule 132 to demonstrate that compounds of the invention which are COX-2inhibitors inhibit various cancer cell lines. The rejection of the claims has been modified to state that the methods are enabled for the treatment of the specific cancers which applicants have shown in the Reddy Declaration or provided references for. One of ordinary skill in the art would not expect that a compound would be useful for the treatment of all cancers mediated by COX-2, cyclooxygenase-2-mediated disorders, inflammation-mediated disorder that is mediated by cyclooxygenase-2, neoplasia that is mediated by cyclooxygenase-2 and angiogenesis-mediated disorder that is mediated by cyclooxygenase-2.

Claims 1 to 19, 24, 25, 27 to 33 and 48 to 54 are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action

is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fiona T. Powers whose telephone number is 571-272-0702. The examiner can normally be reached on Monday - Friday 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph K. McKane can be reached on 571-272-0699. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Fiona T. Powers
Primary Examiner
Art Unit 1626

ftp
March 28, 2006